

REVISION

1.76

KoamTac
A NEW WAVE IN AUTO ID

User Manual KDC100



February, 2009

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TO PREVENT FIRE OR SHOCK HAZARD, DO NOT EXPOSE THIS UNIT TO ANY TYPE OF MOISTURE.

DO NOT LOOK DIRECTLY INTO LASER or point the laser into another person's eyes. Exposure to the beam MAY CAUSE EYE DAMAGE.



CAUTION:

Changes or modifications not expressly approved by the manufacturer responsible for compliance could void the user's authority to operate the equipment.

WARNING:

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

INFORMATION TO USER:

This equipment has been tested and found to comply with the limit of a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation; if this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

1. Reorient / Relocate the receiving antenna.
2. Increase the separation between the equipment and receiver.
3. Connect the equipment into an outlet on a circuit difference from that to which the receiver is connected.
4. Consult the dealer or an experienced radio/TV technician for help.

CAUTION:

**RISK OF EXPLOSION IF BATTERY IS REPLACED BY AN INCORRECT TYPE.
DISPOSE USED BATTERIES ACCORDING TO THE INSTRUCTIONS.**

1. INTRODUCTION

Congratulations on purchasing KoamTac's revolutionary barcode scanner and data collector.

Lightweight and compact, with a user-friendly design and superior functionality, KoamTac's KDC works in a variety of portable applications. Use it independently or as an accessory to your PC, PDA, or smartphone. To find out more about KoamTac, Inc. and our family of products, visit us at www.koamtac.com.

FEATURES	KDC100	KDC200	KDC200P	KDC300
USB CONNECTIONS	2	1	1	1
RECHARGEABLE BATTERY	YES	YES	YES	YES
SCAN ENGINE	Laser	Laser	Laser	Imager
AUTOMATIC DATA UPLOAD	YES	YES	YES	YES
STORES 10,000+ BARCODES	YES	YES	YES	YES
KTSYNC® SOFTWARE	YES	YES	YES	YES
SDK FOR DEVELOPERS	YES	YES	YES	YES
SUPPORTS MICROSOFT® XP, VISTA, MOBILE 5.0+	YES	YES	YES	YES
BLUETOOTH ENABLED	NO	YES	YES	YES

Table 1 - Features of KDC

2. INSTALLATION & OPERATION

2.1 KDC Package

The standard KDC package contains:

1. One KDC barcode data collector
2. One USB cable
3. One neck strap
4. One KDC Laser Barcode Data Collector CD containing:
 - KTSync® for XP, Vista, and Mobile 5.0+
 - KDC device driver
 - User Manual

NOTE: Depending on your region or area, package contents may vary.



Figure 1 - Contents of KDC Package

2.2 Characteristics of KDC

Before you use your KDC to scan, store, and upload barcode data, please become familiar with the physical characteristics of the KDC. For assistance, please refer to Figure 2 which shows the placement of buttons, display, LEDs, and ports on your KDC. All KDC models are similar except for the KDC100 which comes with an additional USB connector.

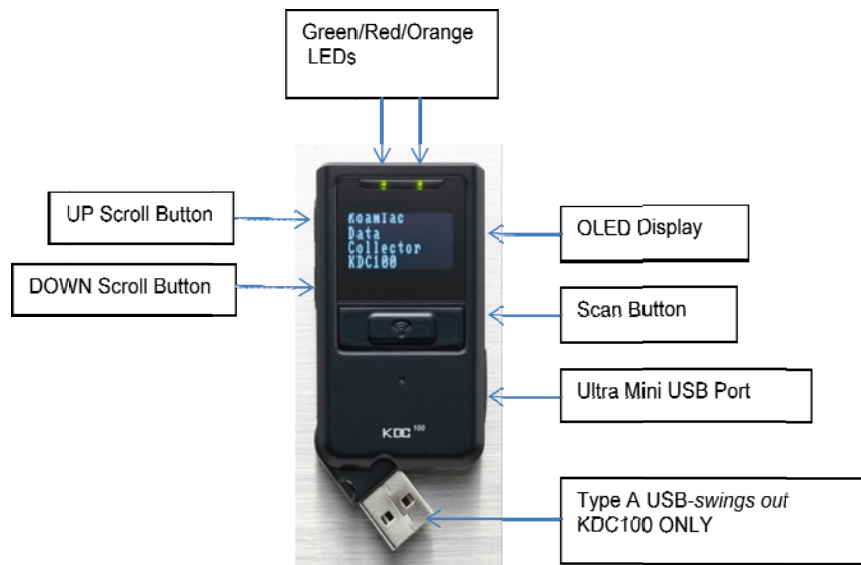


Figure 3 - Characteristics of KDC100



Figure 2 - Characteristics of KDC200, KDC200P, and KDC300

2.3 Installation

Verify System Requirements

Prior to connecting the KDC to your computer, please verify that your system meets the minimum system requirements.

- Microsoft Windows XP or Vista
- 512 MB of free disk space on your system's hard drive.
- Accessible USB port or serial port for connecting KDC to your computer
- 256 MB of memory or more

Affix Neck Strap to KDC

We **strongly** recommend attaching the neck strap to the KDC. Wear the KDC securely around your neck to prevent potential damage to the device if dropped. DO NOT swing the product with the neck strap. Contact with another object may damage the KDC causing it to malfunction. To install the neck strap,

1. Fit small thin cord of the strap around the pillar of the KDC.
2. Loop the thick cord of the strap through the thin loop.
3. Pull the strap tight.

Copy CD to PC

To copy the contents from the KDC Laser Barcode Data Collector CD, insert the CD into your PC's disk drive. From the Windows taskbar, click the Start icon, My Computer icon, then the CD icon. A folder labeled KDC will display. Highlight the folder and click Copy this folder on the left sidebar menu. The Copy Items box pops up. Click on Make a New Folder. Rename folder to KTSync. With the KTSync folder highlighted, click Copy. The KTSync® program, User Manual, and KTRReader.inf file will be copied into that folder.

Connect KDC to PC

The KDC is equipped with one ultra mini USB port. ***If you have the KDC100, it has two ports, Ultra Mini and standard Type A which swings out. See Figure 2 for more details.*** The USB port is used to upload barcode data and to charge the KDC battery. Prior to using the KDC, your PC must recognize the KDC. With the USB cable that came with the KDC, connect the KDC to your PC. Follow these directions for connecting the KDC to your PC.

1. Connect the cable's ultra mini USB connector to the KDC.
2. Connect the cable's Type A USB connector to your PC.
3. Wait until your computer beeps and displays the message *New Hardware Found*.
4. Follow the prompts to search for the KDC device driver. The device driver is located in the KDSync directory created when you copied the CD contents to your PC.
5. Select KDSync directory and *KTReader.inf* file.
6. Continue with the hardware installation procedure.

Charge KDC Battery

After installing the KDC, you must charge its battery. To charge the battery, follow these directions.

1. Connect the cable's ultra mini USB connector to the KDC.
2. Connect the cable's Type A USB connector to your computer.
3. If you don't have a USB port on your computer, you can connect the KDC to the serial port on your computer. You will need to convert the USB connector to a serial connector.
4. Your KDC battery will begin charging. Two small LEDs on the front panel will illuminate orange. When the battery is fully charged, the LEDs will illuminate green.

<i>KDC100</i>	<i>KDC200</i>	<i>KDC200P</i>	<i>KDC300</i>
<i>2 Hours</i>	<i>2 Hours</i>	<i>2 Hours</i>	<i>4 Hours</i>

Table 2 - Amount of Time to Charge KDC Battery

Configure KDC

The KDC is designed to meet the data collection requirements of many different industries in a variety of dynamic situations. To perform well in these diverse environments, the KDC is designed to be configured easily and quickly. For the KDC to perform at its maximum level, the KDC must be configured properly. Until you are familiar with configuring the KDC, it is recommended that you DO NOT modify the KDC. The KDC can be configured in three different methods which are explained in Section 2.5 – KDC Menus, Chapter 3 –Synchronization, and Appendix C – Special Barcodes.

CONFIGURATION METHODS FOR THE KDC

- KDC Menu
- KTSync® Software
- Special Barcodes – *Currently only available for the KDC 100 / 200 / 200P only*

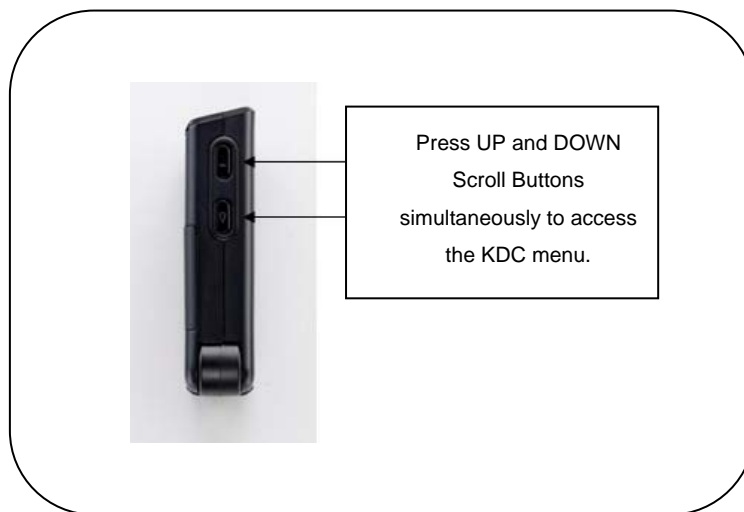


Figure 4 - Location of Scroll Buttons

2.4 Basic Operation

Reading Barcodes

Reading a barcode is simply. Point the KDC at a barcode and press the scan button. Be sure to point the scan engine at the barcode, not at your face, making sure to position the light beam on the barcode. If the barcode is scanned successfully, you will hear one beep and the LEDs will illuminate in green. The scanned barcode data will display along with scan time and battery level. Depending on the configuration of your KDC, other information may also display.

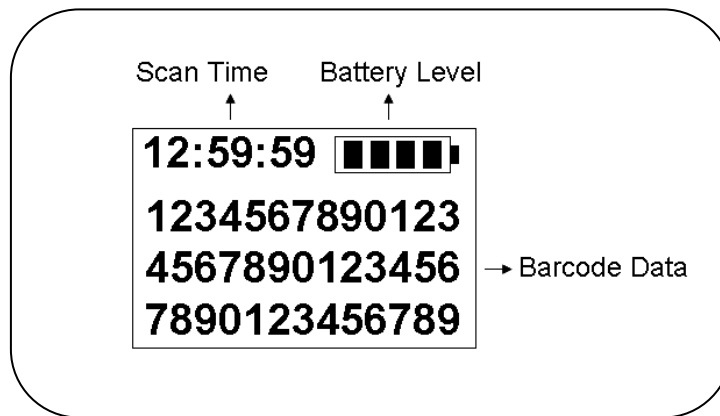


Figure 5 - KDC Display

If the scan was unsuccessful, you will hear two beeps, the LEDs will illuminate in red, and the message **Failed reading...** will display. If you have problems scanning a barcode, try the following suggestions while pointing the KDC at the barcode and depressing the scan button.

- **Modify the angle of the KDC in relation to the barcode, making the angle bigger or smaller as needed.**
- **Modify the distance between the barcode and the KDC, moving closer or further away as needed.**
- **Check option settings defined in the KDC menu section and change options as needed.**
- **Check that the barcode's width does not exceed the light beam's width and vice versa.**

Upload Barcode Data to PC

Use the KTSync® synchronization program to upload barcode data from the KDC to your PC. Please refer to Chapter 3 for details on the Synchronization process.

2.5 KDC Menus

The KDC Menus are designed to make configuring the KDC easy. Access the KDC menus by pressing the UP and DOWN scroll buttons on the side of the KDC simultaneously and holding for five seconds. See Figure 3 – Location of Scroll Buttons for more details. The table below summarizes the KDC Menus. Refer to Chapter 4 for detailed information regarding each option setting.

Top Menu	Sub Menu	Note
KDC Mode	Normal	Default
	Onetime	Onetime Compare Mode
	Continuous	Continuous Compare Mode
	Collation	Select Compare Digits
View Data	View/Delete	View/Delete Data
Set Barcodes	EAN13	Enable/Disable
	EAN8	Enable/Disable
	UPCA	Enable/Disable
	UPCE	Enable/Disable
	CODE39	Enable/Disable
	ITF14	Enable/Disable
	CODE128	Enable/Disable
	I2of5	Enable/Disable
	CODABAR	Enable/Disable
	EAN128	Enable/Disable
	CODE93	Enable/Disable
	CODE35	Enable/Disable
	BooklandEAN	Enable/Disable
	EAN13withAddon	Enable/Disable
	EAN8withAddon	Enable/Disable
	UPCAwithAddon	Enable/Disable
	UPCEwithAddon	Enable/Disable
Barcode Options	CodaBar_NoStartStopChars	Narrow/Wide
	UPCE_as_UPCA	Narrow/Wide
	EAN8_as_EAN13	Narrow/Wide
	UPCE_as_EAN13	Narrow/Wide
	ReturnCheckDigit	Narrow/Wide
	VerifyCheckDigit	Narrow/Wide
	UPCA_as_EAN13	Narrow/Wide
	I2of5_VerifyCheckDigit	Narrow/Wide
	Code39_VerifyCheckDigit	Narrow/Wide
	I2of5_ReturnCheckDigit	Narrow/Wide
	Code39_ReturnCheckDigit	Narrow/Wide
	UPCE_ReturnCheckDigit	Narrow/Wide
	UPCA_ReturnCheckDigit	Narrow/Wide
	EAN8_ReturnCheckDigit	Narrow/Wide
	EAN13_ReturnCheckDigit	Narrow/Wide
Top Menu	Sub Menu	Note
Scan Options	Scan Angle	Narrow/Wide
	Filter	Normal/High
	Time Out	.5 seconds to 10 seconds
	Min. Barcode Length	2 to 36 characters
	Security Level	1 to 4 level
Data Process	Wedge / Store	Wedge Only
		Wedge & Store
		Store Only
		Wedge & Store if Sent
		Wedge & Store if Not Sent
	Data Format	Barcode only
		Packet Data
	Handshake	Enable/Disable
	Terminator	None, CR, LF, CR+LF, or Tab
Bluetooth <i>KDC 200 KDC200P KDC300 only</i>	Power	Enabled/Disabled
	Pairing	Enter Pairing Mode
	Auto Connect	Enabled/Disabled
	Auto Power On	Enabled/Disabled
	Auto Power Off	Enabled/Disabled
	Beep Warning	Enabled/Disabled
	Power Off Time	1 to 30 minutes
PDF417 <i>KDC200P only</i>	Quality	1 to 4
	Tilt	1 to 6
	Start/Stop	Enable/Disable
System	Memory Status	No. of Stored Barcodes & Free Memory Available
	Reset Memory	Empties Data Memory
	Sleep Timeout	Disabled to 10 minutes
	Date / Time	YYYY:MM:DD or HH:MM:SS
	Battery	% of Battery Charge Available
	Version	Firmware Version & Serial No.
	Button Lock	Enabled/Disabled
	Beep Sound	Enabled/Disabled
	Auto Exit	Enabled/Disabled
	Port Status	Enabled/Disabled
	Display Format	Time & Battery, Type & Time, or Type & Battery
	Factory Default	Restores Default Settings

Table 3 - KDC Menu Settings and Options

KDC Mode Menu

The KDC Mode Menu has three options – Normal, Onetime, and Continuous modes.

- Normal: This is the default mode which provides basic barcode scanning. In Normal mode barcode data can be manipulation directly through the KDC or using KTSync® during the synchronization process.
- Onetime: This mode allows you to define a master barcode and then compare another barcode to the master barcode one time.
- Continuous: This mode allows you to define a master barcode and then compare multiple barcodes to the master barcode continuously.
- Collation: This mode works in conjunction with Onetime and Continuous modes, allowing you to define a string of characters within the master barcode and a string of characters within a slave barcode for comparison in Onetime or Continuous modes.

View Data Menu

This menu option allows you to view and/or delete barcodes stored in the KDC.

Set Barcodes Menu

This menu lists all the barcode symbologies supported by your KDC and allows you to select the barcode symbologies you will be scanning. For maximum scan performance, you should select only the symbologies you are scanning. Please refer to Appendix A.1 – Symbologies for a detailed listing of symbologies supported by your KDC.

Code Options Menu

Your KDC supports various Code Options including Transmission of Start and Stop Characters, Symbology Conversion, Verification of Optional Check Character, and Transmission of Check Digit. Please refer to Appendix A.2 – Code Options for a detailed explanation of each option.

Scan Options Menu

- **Scan Angle:** Allows you to configure the laser beam angle to the barcode. Wide is 54° and Narrow is 27°. The default is Wide.
- **Filter:** Allows you to change the Filter mode from Normal to High for poor quality barcodes. The default is Normal.
- **Timeout:** Allows you to set the length of time before the KDC will stop scanning a barcode from .5 second up to 10 seconds. The default is 2 seconds.
- **Minimum Barcode Length:** Allows you to set a barcode length from 2 characters to 36 characters. It is strongly recommended that you maximize the minimum barcode length setting to prevent possible errors. The default is 4 characters.
- **Security Level:** Allows you to ensure an accurate barcode reading by setting the number of times the KDC will read a barcode. Security Level is set from 1 up to 4. The higher security level means more reliable readings though some performance degradation is likely. For poor quality barcodes, we recommend increasing the security level. The default is 1.

Data Process Menu

Wedge/Store - The KDC provides five modes of data transmission in keyboard wedging mode.

- Wedge Only: Barcode data is NOT stored in memory but transmitted to the host.
- Wedge & Store Only: Barcode data is stored in memory and transmitted to the host.
- Store Only: Barcode data is stored in memory but NOT transmitted to the host.
- Wedge & Store if Sent: If data transmission is successful, barcode data is stored in memory.
- Wedge & Store if Not Sent: If data transmission is NOT successful, barcode data is stored in memory.

Data Format - The KDC provides two data formats, Barcode Only and Packet Data.

- Barcode Only: KDC transmits scanned barcodes only. User may incorporate proper data transmission error detection and correction mechanism in this mode.
 - KDC supports various termination characters for barcode only format.
 - User can select <NONE>, <CR>, <LF>, <CR+LF> or <TAB> as the termination character.
- Packet Data: KDC transmits packet data with checksum to minimize transmission errors.
 - KTSync[®] operates in Packet Data mode ONLY.
 - If you are using KTSync[®], Data Format mode must be set to Packet Data.

Handshake - KDC provides Handshake mode when Data Format is set to Packet Data.

- Handshake Mode will increase the reliability of barcode data transmission.
- The default mode for Handshake is Disabled.
- Data transmission speed is slower when Handshake Mode is Enabled.

Terminator – KDC supports various termination characters when the Data Format mode is set to Barcode Only. This option allows you to select <NONE>, <CR>, <LF>, <CR+LF>, or <TAB> as the termination character. The default terminator is <CR+LF>.

System Menu

- **Memory Status:** Checks the number of stored barcodes and memory usage.
- **Reset Memory:** Resets KDC memory by erasing all stored barcodes.
- **Sleep Timeout:** Sets amount of time KDC waits, when not being used, before going to *sleep*.
- **Date/Time:** Sets the date and time of KDC which can also be set using KTSync®
- **Battery:** Shows current status of battery power level.
- **Version:** Shows KDC firmware version and serial number.
- **Button Lock:** Locks or unlocks KDC scan and scroll buttons.
- **Beep Sound:** Enables or disables KDC beep sound.
- **Port Status:** Enable or disable KDC port messages.
- **Display Format:** Selection of display format - Time & Battery, Type & Time, or Type & Battery
- **Factory Default:** Resets certain KDC options to factory defaults. Factory defaults for all KDC models are listed below.

Set Barcodes EAN13 EAN8 UPCAUPCE CODE39 ITIF14 CODE128 I2of5 CODABAR EAN128 CODE93 CODE35 Code Options UPCreturnCheckDigit UPCAreturnCheckDigit EAN8returnCheckDigit EAN13returnCheckDigit	Scan Options Scan Angle – Wide Filter – Normal Timeout – 2 seconds Minimum Length – 4 Characters Security Level – 2 Level Data Process Wedge/Store – Wedge & Store Always Data Format – Barcode Only Handshake- Disabled Terminator - <CR> + <LF>	Bluetooth - <u>KDC200/200P/300 only</u> Power – Disabled Auto Connect – Disabled Auto Power On –Disabled Auto Power Off- Enabled Beep Warning – Enabled Power Off Time – 5 minutes System Sleep Timeout – 5 seconds Button Lock – Disabled Beep Sound – Enabled Auto Exit –Enabled Port Status –Enabled Display Format – Time & Battery
--	---	--

Table 4 - KDC Factory Default Settings

2.6 LED Status

LED Color	Status
Green	<ul style="list-style-type: none">• Successful Reading• USB is connected and battery is fully charged
Orange	<ul style="list-style-type: none">• Low battery• USB is connected and battery is charging
Red	<ul style="list-style-type: none">• No reading• Empty battery

Table 5 - Explanation of LEDs

2.7 Empty Battery

The KDC will display the message **Empty Battery Connect USB** when the battery is empty. Synchronize the KDC IMMEDIATELY to prevent loss of collected data.

2.8 Buffer Full

The KDC will display the message **Buffer Full** when the size of collected data reaches 200KB or the number of collected barcodes is 10,240. To prevent the loss of data, you should synchronize the data then reset the memory when this message displays.

2.9 Reset

The Reset feature lets you restart the KDC if necessary without losing any stored barcode data or option settings. To reset the KDC, follow these steps.

1. Connect the KDC to your PC.
 - KDC100 - Connect to your PC directly using the *swing out*, Type A USB connector. See Figure below.
 - KDC200 / KDC200P / KDC300 - Connect to your PC using the included cable, attaching the ultra mini USB connector to your KDC and the standard, Type A connector to your PC's USB port. See Figure below.
2. Press DOWN scroll button and SCAN button simultaneously for 5 seconds.
3. When the LEDs illuminate yellow, release the buttons.
4. The KDC initial screen, **KoamTac Data Collector KDC** displays when reset is complete.

Note:

The KDC stores collected data into flash memory and will not lose data or the KDC settings during the reset process.



Figure 7 - KDC100 Reset Function



Figure 6 - KDC200 / KDC200P / KDC300 Reset Function

2.10 Replace Battery

The KDC battery has a lifetime of at least 300 charges. However, when the battery is no longer chargeable, it needs to be replaced. You can purchase a replacement battery from your distributor. The steps for replacing the battery are as follows.

1. Disassemble the KDC back cover by unscrewing the middle screw.
2. Remove old battery and replace with new battery.
3. Reassemble the back cover.

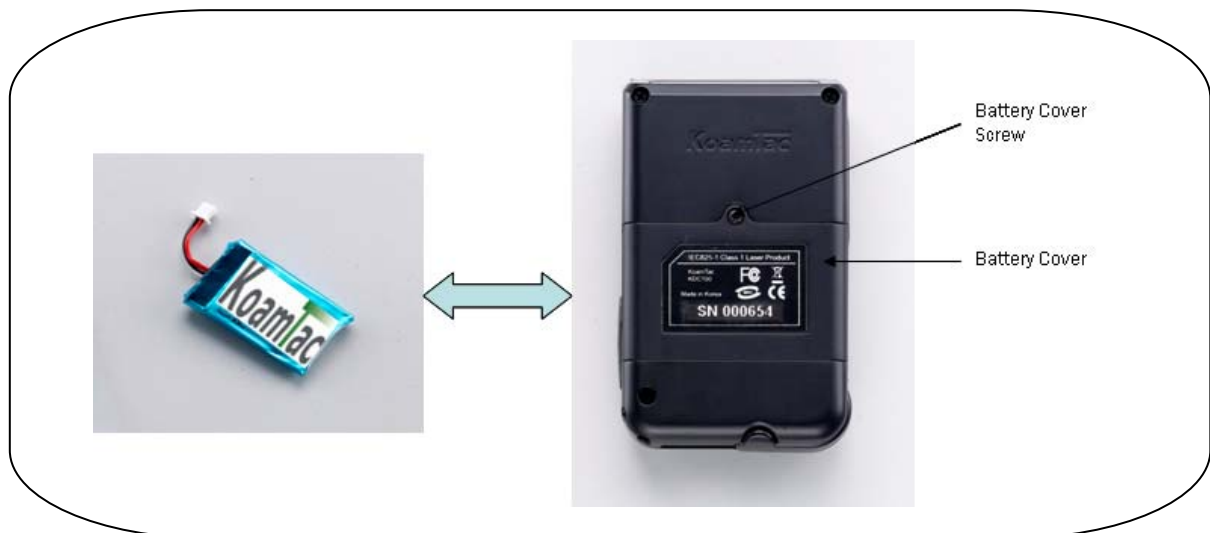


Figure 8 - Replacing KDC Battery

3. SYNCHRONIZATION

When barcode data is collected, it must be uploaded to your application. KTSync®, which is bundled with the KDC, is software that allows barcode data to be uploaded to any PC, PDA, or smartphone running Windows XP, Vista, or Mobile 5.0+. It has two major functions - Synchronization and Keyboard Emulation.

- Synchronization - Provides data upload functionality to your applications.
- Keyboard Emulator - Allows scanned data to upload directly into your application as if the data were being entered manually on a keyboard.
- Additional functions include:
 - Prefixes and suffixes add-on functions to scanned barcodes eliminating manual data entry
 - Symbology and Scan Option selections
 - Barcode Wedging options

KTSync® was installed during the initial installation process. Before data can be uploaded to a host device, KTSync® must be launched on the host and configured to recognize the KDC. The following screen displays when KTSync® is launched.

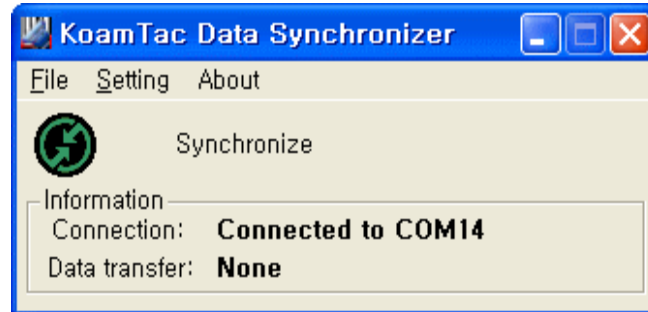


Figure 9 - KTSync® Synchronizer Menu

File Menu

- Connect: Select the KDC port assignment. This information can be found in Windows Device Manager. The port assignment is used by KTSync® when synchronizing data from the KDC.
- Synchronize: This option tells the KDC to synchronize data with the host manually.

Setting Menu

- Synchronize: Select Synchronize options.
- Barcode & KDC: Select Barcode and KDC options.
- Confirmation: Select Auto Connection and/or Synchronization Confirmation options.

About Menu - KTSync® - Version Information

3.1 Connect to KDC

The KDC connects to a COM port automatically when connected to your PC's USB port. After the port is assigned, you must manually assign the KDC to its assigned COM port in KTSync®. **You can manually assign the KDC COM port using KTSync® Connection submenu under File menu if needed.**

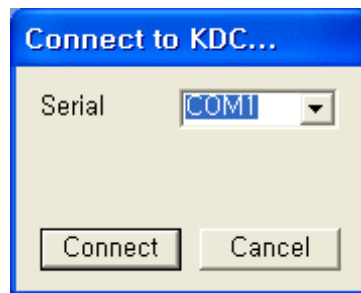


Figure 10 - KTSync® COM Port Selection

- The COM port assignment is found in the Windows Device Manager.
- KTSync® will not connect to the KDC if it is in KDC Mode Menu. You must EXIT the KDC from the Menu before KTSync® will connect to the KDC.
- If KTSync® fails to connect automatically to the KDC, please follow these directions.
 1. Exit KTSync®.
 2. Check that you have connected the KDC to a USB port on your PC.
 3. Make sure to use the cable provided with the KDC.
 4. Check that the KDC is not in KDC Mode Menu.
 5. Restart KTSync®.

3.2 Synchronization Settings

The KDC Menu provides several synchronization options for synchronizing host devices such as your PC, PDA, or smartphone. KTSync® is included with the KDC for synchronizing host devices running Windows XP, Vista, or Mobile 5.0+. You can also configure various Synchronization and Keyboard Emulation functions in the Synchronization Settings option.

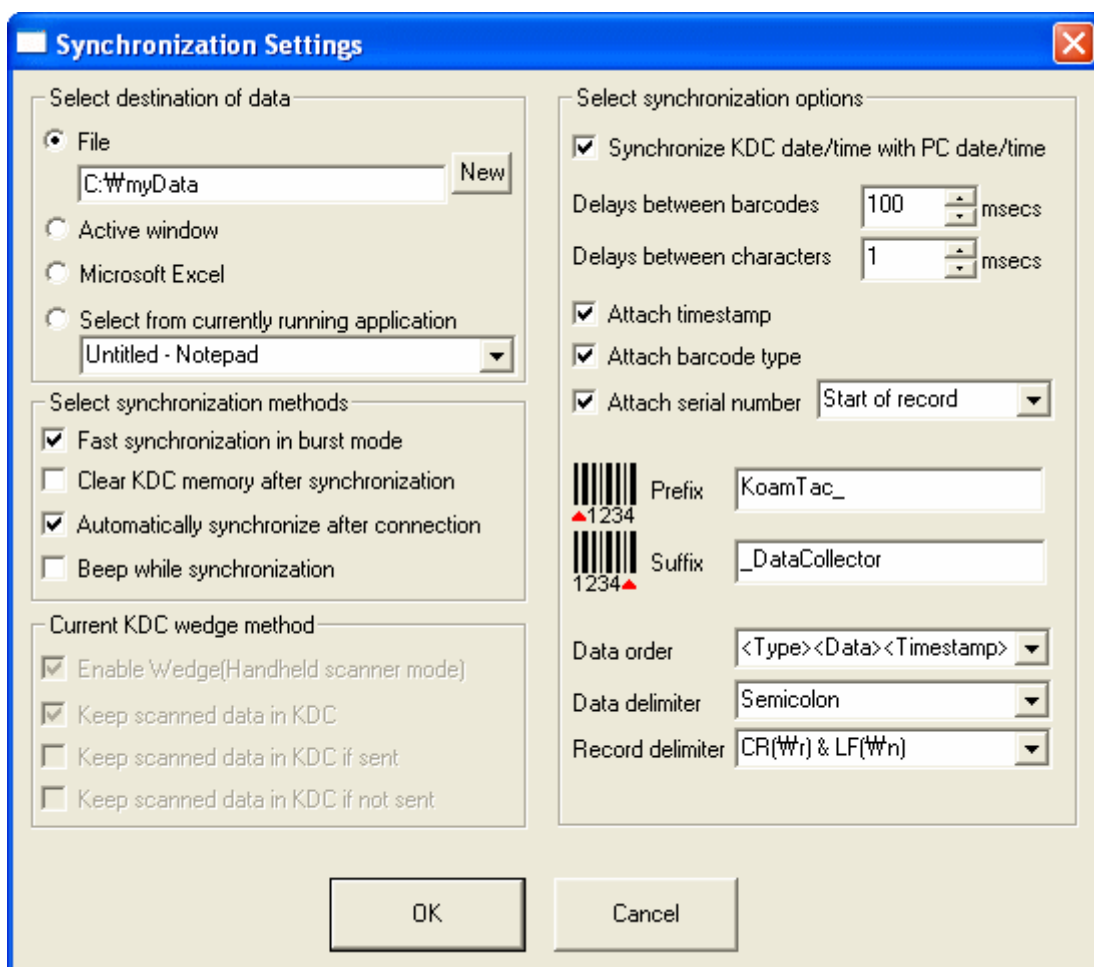


Figure 11 - KTSync® Synchronization Settings

Destination of Data

When barcode data is uploaded to the host device, you must assign a destination for the data.

Destination of Data options include:

- File - This option means data will be saved in the assigned filename. You can select a different target directory by clicking the New icon. C:\MyData is the default directory. If this directory is not created, you will be prompted to create it before data can be uploaded to a file.
- Active Window - This option means scanned barcode data is sent directly to the active program running on your device as if the data was being entered directly from a keyboard.
- Microsoft Excel - This option means barcode data is being imported directly into Microsoft's Excel. Various parameters can be set when uploading data to Excel.
- Select from Current Running Application – This option allows you to select a currently running application for data synchronization.

Note:

- Data synchronization begins immediately if *Automatically After Connection* is selected. If not selected, data synchronization is started manually by the user.
- Users **SHOULD NOT** operate the PC during the synchronization process. It can interrupt the process causing unreliable results.

Synchronization Methods

Fast Synchronization in Burst Mode

The KDC can synchronize data to a host device in Burst mode or Handshake mode. Burst mode provides the fastest synchronization process when the Destination of Data option is set to File.

Clear KDC Memory after Synchronization

The stored barcode data is cleared from the KDC memory after synchronization if this option is selected. The KDC can store a total of 10,240 barcodes or 200KB of barcode data.

- It is important to clear the KDC memory periodically to prevent Buffer Full message which will prevent the KDC from storing additional data.
- Stored barcode data can also be deleted using the Reset Memory feature on the KDC.

Automatically Synchronize after Connection

This option lets you automatically synchronize collected data to your PC immediately when the KDC is connected to the host.

- IMPORTANT: Remember to configure all options properly before performing an automatic synchronization process.
- Data synchronization can be done manually by clicking the synchronize icon if this option is not selected.

Beep while Synchronization

You can enable or disable the beep tone during the synchronization process. A beep is sounded each and every time barcode data is synchronized if this option is selected. The KDC beeps 5 times when the synchronization process is complete.

KDC Wedge Method

The KDC can be configured in one of five Wedge/Store modes -

- Wedge Only - Scanned data is transmitted to the host. The KDC does not store scanned data.
- Wedge & Store - Scanned data is stored in the KDC and transmitted to the host.
- Store Only - Scanned data is stored in the KDC but NOT transmitted to the host.
- Wedge & Store if Sent - Scanned data is stored in the KDC ONLY if transmission to the host is successfully.
- Wedge & Store if Not Sent - Scanned data is stored in the KDC ONLY if transmission to the host is unsuccessfully.

Enable Wedge (Handheld scanner mode)

- Marked if either Wedge only or Wedge & Store option are selected.

Keep Scanned Data in KDC

- Marked if either Store only or Wedge & Store option are selected.

Synchronization Options

Synchronize KDC Time with PC Time when Connected

This option enables you to synchronize the KDC date and time with host device date and time. Synchronization of date and time occurs after the data is uploaded to the host device.

Delays

You can set transmission delays between barcodes and characters during the synchronization process. It is important to set proper delays to prevent errors during the transmission of collected barcodes. Some Windows applications such as Excel require longer delay times.

Prefix and Suffix

- Enter the characters you want appended to the front or back of the barcode in the prefix and/or suffix fields.
- The character set is any combination of ASCII characters including alphanumeric, line feed (“\n”), and carriage return (“\r”).

Order and Delimiter

- Select Order of Data – Type, Data, and Timestamp
- Select the Delimiter between Data – Tab, Space, Comma, and Semicolon
- Select the Delimiter between Records – None, LF, CR, Tab, and <LF & CR>

3.3 Barcode & KDC Settings

KTSync® allows you to configure the KDC Scan Options and Barcode Settings. The configurations options for the KDC using KTSync® are similar to the Set Barcodes, Code Options, and Scan Options on the KDC Menu. Please refer to Appendix A for proper barcode settings for your application.

IMPORTANT: You must configure barcode options properly for the best performance.

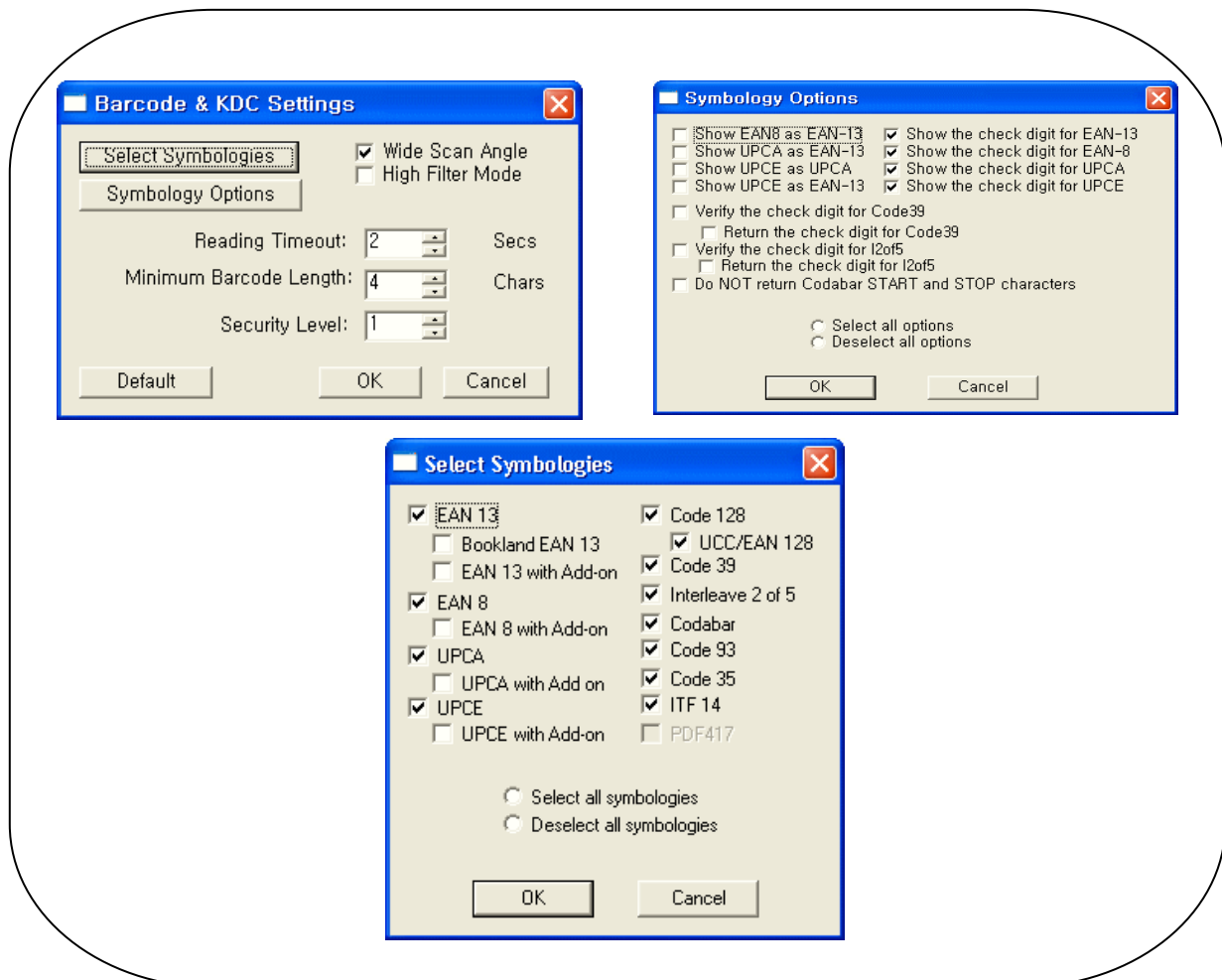


Figure 12 - KTSync® Barcode, Symbologies, and Scan Options

3.4 Confirmation Settings

The Confirmation Settings window will display. If you want to confirm an Auto Connection or Auto Synchronization, this window will pop up.

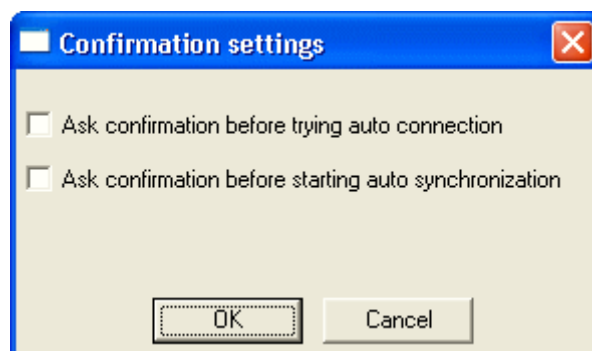


Figure 13 - KTSync[®] Confirmation Settings

4. Master - Slave Barcode Compare

The KDC Mode Menu supports two applications for collecting data, Normal mode and Master-Slave Barcode Compare mode. In the Master-Slave mode, a **master** barcode is defined then compared to **slave** barcodes. The specific modes are described below.

- Onetime mode - Define one **master** barcode and compare it with one **slave** barcode.
- Continuous mode - Define one **master** barcode and compare it with multiple slave barcodes.
- Collation mode
 - Allows you to compare a substring within a barcode instead of comparing an entire barcode string.
 - This mode uses a Start Character Position and Number of Characters to be Compared to define the substring.

The following flow chart shows the data flow in this Master-Slave Compare application. Within this application, you can go back to KDC Mode Menu by pressing the UP and DOWN scroll buttons simultaneous during the Master-Slave Barcode Compare process.

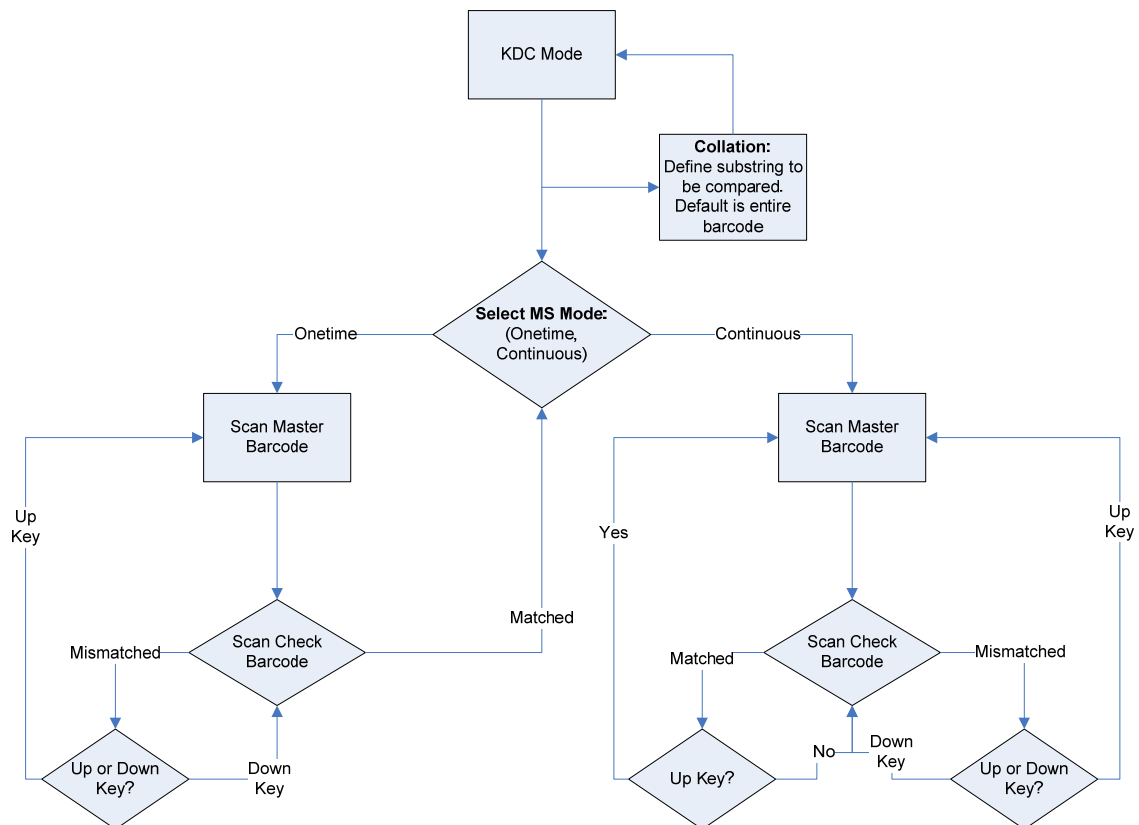


Figure 14 - Master-Slave Barcode Compare Application

5. Troubleshooting

PROBLEM	CAUSE	SOLUTION
KDC not working	Dead battery	Charge battery by connecting KDC to your PC using the included cable
	Hardware failure	Contact distributor for technical support
KDC not charging	Bad battery	Replace battery – Contact Local Distributor
	Poor USB port	USB port doesn't supply proper current - Charge KDC using a different USB port on your PC
Failed reading	Damaged barcode	Scan a different barcode
	Out of scan range	Move the scanner closer or farther from the barcode
	Incorrect angle	Change the angle until the scanner reads the barcode
	Symbology not supported	Contact KoamTac - www.koamtac.com for possibility of custom symbology support
	Scan options	Check scan option settings
	Dirty scan window	Clean scan window
	Damaged scan window	Replace scan window
KDC reads wrong barcode	Dirty scan window	Clean scan window
	Damaged scan window	Replace scan window
	Poor quality barcode	<ul style="list-style-type: none"> ■ Select only necessary barcodes ■ Increase minimum barcode length ■ Increase security level
Can't communicate with PC, PDA, or smartphone	USB cable is not connected properly	Check cable connection between KDC and PC, PDA, or smartphone
	Software is not working properly	Reload the software
	COM configuration	Check COM port configurations
LED blinks yellow	Low battery power	Charge the battery by connecting KDC to PC. KDC will lose collected data if the battery is empty.
Buffer Full Message	Full Memory	Clear the Memory using Synchronization program
Empty Battery Message	Empty battery	Connect USB immediately. Synchronize the collected data and charge KDC

Table 6 - Troubleshooting Techniques

6. Warranty

LIMITED WARRANTY AND DISCLAIMERS

BY OPENING THE PACKAGE OF THIS PRODUCT YOU AGREE TO BECOME BOUND BY THE LIABILITY AND WARRANTY CONDITIONS AS DESCRIBED BELOW.

UNDER ALL CIRCUMSTANCES THIS MANUAL SHOULD BE READ ATTENTIVELY, BEFORE INSTALLING AND OR USING THE PRODUCT.

Serial Number

A serial number appears on the KDC label. This official registration number is strictly related to the device purchased. Make sure that the serial number appearing on your KDC is not removed. Removing the serial number will affect the warranty conditions and liability disadvantageously, so please be strict at maintaining the label with serial number on the KDC. Units with the serial number label removed should not be operated.

Warranty/Warranty Period/Liability

KoamTac, Inc. ("KoamTac") manufactures its hardware products in accordance with industry-standard practices. Unless otherwise agreed in a contract, KDC is warranted for a period of one year after purchase, covering defects in material and workmanship except rechargeable battery. KoamTac will repair or, at its opinion, replace products that prove to be defective in material or workmanship under proper use during the warranty period. KoamTac will not be liable in cases (i) in which the unit has been repaired or altered unless done or approved by KoamTac, (ii) in which the unit has not been maintained in accordance with any operating or handling instructions supplied by KoamTac, (iii) in which the unit has been subjected to unusual physical or electrical stress, misuse, abuse, power shortage, negligence or accident or (iv) in which the unit has been used other than in accordance with the product operating and handling instructions. Preventive maintenance is the responsibility of the customer and is not covered under this warranty. Under no circumstance will KoamTac be liable for any direct, indirect, consequential or incidental damages arising out of use or inability to use either the hardware or software, even if KoamTac has been informed about the possibility of such damages.

Warranty Coverage and Procedure

During the warranty period, KoamTac will repair or replace defective products returned to KoamTac warehouse. International customers should contact the local KoamTac office or support center. If warranty service is required, KoamTac will issue a Return Material Authorization Number. Products must be shipped in the original or comparable package, shipping and insurance charges prepaid. KoamTac will ship the repaired or replacement product freight and insurance prepaid. Customer accepts full responsibility for its software and data including the appropriate backup thereof. Repair or replacement of a product during warranty will not extend the original warranty term.

WARNING

CAUTION: Changes or modifications not expressly approved by the manufacturer responsible for compliance could void the user's authority to operate the equipment.

7. CONTACT INFORMATION



CORPORATE HEADQUARTERS

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For more information, visit our website - www.koamtac.com

APPENDIX A - BARCODE & SCAN OPTIONS

The process for scanning and reading barcodes is delicate and complicated. Your KDC, though equipped with a high performance scan engine, if configured incorrectly, may not perform at its peak performance level. To ensure its high performance, the KDC comes configured to optimize its scan engine technology. Unless you clearly understand the impact of your changes to the KDC settings, please do not change factory default settings.

A.1 Symbolologies

KoamTac's KDC products support most major barcode symbolologies including 1D, 2D, Postal, and OCR-Fonts. Below is a list of the barcode symbolologies supported by the KDC with respect to each models particular area of support. To ensure superior scan performance, remember to select only the required symbolologies.

	<i>KDC100</i>	<i>KDC200</i>	<i>KDC200P</i>	<i>KDC300</i>
<i>1D Barcodes</i>	EAN13, EAN8, UPCA, UPCE, Bookland EAN, EAN13 with Add-on, EAN8 with Add-on, UPCA with Add-on, UPCE with Add-on, Interleave 2 of 5, ITF14, Code128, Codabar, EAN128, Code39, Code93, & Code35	EAN13, EAN8, UPCA, UPCE, Bookland EAN EAN13 with Add-on, EAN8 with Add-on, UPCA with Add-on, UPCE with Add-on, Interleave 2 of 5, ITF14, Code128, Codabar, EAN128, Code39, Code93, & Code35	EAN13, EAN8, UPCA, UPCE, Bookland EAN EAN13 with Add-on, EAN8 with Add-on, UPCA with Add-on, UPCE with Add-on, Interleave 2 of 5, ITF14, Code128, Codabar, EAN128, Code39, Code93, & Code35	Codabar, Code11, Code32, Code39, Code128, EAN8, EAN13, EANUCC, I2of5, MSI, Plessey, PosiCode, RSS-14, RSSLimit, RSSEXPAND, S2of5IA, S2of5ID, TLC39, Telepen, Trioptic, UPCA, & UPCE
<i>2D Barcodes</i>	<i>N/A</i>	<i>N/A</i>	PFD417	AztecCode, AztecRunes, CodablockF, Code 16K, Code49, DataMatrix, MaxiCode, MicroPDF, PDF417, & QRCode
<i>Postal Barcodes</i>	<i>N/A</i>	<i>N/A</i>	<i>N/A</i>	AusPost, CanadaPost, ChinaPost, JapanPost, KoreaPost, KixPost, Planet Code, Postnet (US), & UKPost
<i>OCR Fonts</i>	<i>N/A</i>	<i>N/A</i>	<i>N/A</i>	OCR-A, OCR-B, OCRUSCurrency, OCRMICRE13B, & OCRSEMIFONT

Table 7 - Symbolologies Supported by KDC

Bookland EAN vs. EAN-13

Bookland EAN which includes ISBN, ISSN, and ISMN, is supported by the KDC. This group of symbologies is essentially an EAN-13 barcode with fixed prefixes; 977 for ISSN, 978 for ISBN, and 979 for ISMN. If EAN-13 and Bookland EAN are both enabled, Bookland EAN takes precedence. Bookland EAN does not have any options. The Bookland EAN barcode does not contain any groupings – that is, there are no hyphens or separators. Thus, the ISBN 957-630-239-0 is transmitted as 9576302390.

Add-on Symbologies

By default, the 2 or 5 digit add-on symbols with a UPCE, UPCA, EAN-8, and EAN-13 barcode is neither decoded nor transmitted. Transmission for these specific symbologies is enabled by setting the appropriate *withAddOn* options.

There are 4 *withAddOn* options, one for each symbology:

- **UPCEwithAddOn**
- **UPCAwithAddOn**
- **EAN8withAddOn**
- **EAN13withAddOn**

The decoding of add-on symbols is typified by the following table, which explains the process for EAN-13 symbols.

Mode	Behavior	Value of flags	
		EAN13	EAN13withAddOn
Auto-discrimination	If add-on symbol is present, then it is also decoded; otherwise only the EAN-13 symbol is decoded.	true	true
With add-on	Only EAN-13 barcodes with 2 or 5 add-on symbol are decoded.	false	true
Without add-on	The add-on symbol is ignored.	true	false

Table 8 - Add-on for EAN-13 Symbology

The add-on symbol is appended to the EAN-13 barcode. The process is similar for UPCE, UPCA, and EAN-8 barcodes. Note that all the UPCE, UPCA, EAN-8, and EAN-13 formatting and conversion options are in effect. The following table should help explain the effect of various options for EAN-8 barcode 12345670 + 12.

Barcode	EAN8_as_EAN13	EAN8_ReturnCheckDigit	EAN13_ReturnCheckDigit
1234567012	false	true	N/A
123456712		false	
00000123456712	True	N/A	false
000001234567012			true

Table 9 - Add-on for EAN-8 Symbology

The add-on symbol neither contains check digit nor a terminating guard band. Every effort has been made to reduce the decoding error; however, it is likely to decode a partial scan of a 5-digit add-on symbol as a 2-digit add-on symbol. It is strongly recommended that the minimum security level is set at 2 while decoding add-on symbols.

Since the decoder takes a conservative view on the add-on symbols, it is likely that the add-on symbol will be missed in the auto-discrimination mode. Auto-discrimination mode should then be avoided.

A.2 Code Options

The KDC supports the following barcode options:

- Transmission of start and stop characters
- Reverse direction
- Symbology conversion
- Verification of optional check character
- Transmission of check digit

Transmission of Start and Stop Characters

For Codabar symbols you can choose not to transmit the start and stop symbols, the NOTIS Editing. By default, they are transmitted. Setting the field **CodaBar_NoStartStopChars** to true disables the transmission.

Reverse Direction

This option may be selected if direction oriented symbologies are selected such as Code35.

Symbology Conversion

By default the EAN-8, UPCE, and UPCA symbols are transmitted in their native format. It is possible to show them in a different format. You can choose to display UPCE symbols as either UPC-A or EAN-13 symbols, EAN-8 symbols as EAN-13 symbols, or UPC-A symbols as EAN-13 symbols. The following table shows the effect of setting various options.

Option	EAN-8	UPC-A	UPC-E	All others
EAN8_as_EAN13	Converted to EAN-13	No effect	No effect	No effect
UPCA_as_EAN13	No effect	Converted to EAN-13	No effect	
UPCE_as_EAN13	No effect	No effect	Converted to EAN-13	
UPCE_as_UPCA	No effect	No effect	Converted to UPC-A	

Table 10 - Symbology Conversion

Verification of Optional "Check Digit"

Code39 and Interleave 2 of 5 have an optional check digit, which, by default, is not verified. Their verification can be enabled by selecting the option **VerifyCheckDigit** to true or you can enable the verification for individual symbologies. If the check digit verification fails then the barcode is not transmitted.

Option Selected	Verify Code39 check digit	Verify I2of5 check digit
VerifyCheckDigit	Yes	Yes
Code39_VerifyCheckDigit	Yes	No effect
I2of5_VerifyCheckDigit	No effect	Yes

Table 11 - Verification of Optional "Check Digit"

Transmission of "Check Digit"

By default, the check digit – optional or mandatory – is not transmitted. Its transmission can be enabled for all symbologies by enabling **ReturnCheckDigit** option.

Option Selected	Is the check digit returned?					
	EAN-13	EAN-8	UPC-A	UPC-E	Code39	I2of5
ReturnCheckDigit	Yes	Yes	Yes	Yes	Yes	Yes
EAN13_ReturnCheckDigit	Yes	No effect	No effect	No effect	No effect	No effect
EAN8_ReturnCheckDigit	No effect	Yes	No effect	No effect	No effect	No effect
UPCA_ReturnCheckDigit	No effect	No effect	Yes	No effect	No effect	No effect
UPCE_ReturnCheckDigit	No effect	No effect	No effect	Yes	No effect	No effect
Code39_ReturnCheckDigit	No effect	No effect	No effect	No effect	Yes	No effect
I2of5_ReturnCheckDigit	No effect	No effect	No effect	No effect	No effect	Yes

Table 12 - Transmission of "Check Digit"

Resolution of Inconsistencies

Three types of inconsistencies could arise in the assignment of symbology options. The decoder has pre-defined strategies to resolve these inconsistencies:

If **UPCE_as_EAN13** is true, then **UPCE_as_UPCA** is ignored.

If symbology conversion is selected but the target symbology is not enabled, then the decoder still outputs the symbol in the target symbology. For example, suppose UPC-E is enabled and **UPCE_as_EAN13** is true but EAN-13 is disabled. All UPC-E symbols will be shown as EAN-13 and EAN-13 options (if specified) will be applied. For the two symbologies that have optional check digits, Code39 and Interleave 2 of 5, the decoder will always transmit the check digit if the verification is disabled.

Verify Check Digit	Return Check Digit	Description
Disabled	Enabled or Disabled	Check digit is not verified but is transmitted
Enabled	Disabled	Check digit is verified but is not transmitted
Enabled	Enabled	Check digit is verified and is transmitted

Table 13 - Resolution of Inconsistencies

A.3 Miscellaneous Barcode Information

Height of a Linear Barcode

Industry standards suggest a height of either 6.5mm or 15% of the symbol length, whichever is greater. Symbols of less than recommended heights may cause recognition problems.

Check Characters

Yes, we recommend the use of check-characters in barcodes. Operating without check-characters is not safe and will lead to errors that are costly to correct. Using check-characters positively affects data integrity especially when character density is at the limits and/or image quality is not at its best.

Prevent Interleave 2 of 5 Partial Reading

A partial scan of an Interleave 2 of 5 symbol may decode and cause incorrect data to be read. To prevent partial scans on long symbols, you should include bearer bars. These are bars that run along the top and bottom edges of the barcode in the scanning direction. If a partial scan of the barcode occurs, the scanning beam will hit the bearer bar and will not decode. The bearer bar must touch the top and bottom of all the bars and must be at least 3 times as wide.

Another solution for the short scanning problem is to fix all Interleave 2 of 5 symbols to a set number of digits. Zeros can be used to pad the data to the set number of digits. The application program would then be set to only accept scans of the correct number of digits.

Finally, a check digit may be used. The Interleave 2 of 5 symbology has an optional check character which uses a weighted Modulo 10 scheme. The check character is the last character in the symbol and should be checked by the decoder and then transmitted with the data. Since Interleave 2 of 5 must always have an even number of digits, the leftmost character may need to be a zero when the check character is added. The standard check digit is calculated by assigning alternating 3,1,3,1... weights to respective data digits. These weights are then multiplied by their respective data digits and the products are summed. The check digit is the digit needed to be added to the sum to make it an even multiple of 10. An example would be if the sum of the products was 37, then the check digit would be 3.

Equation to Determining Potential Number of Stored Barcodes

The number of barcodes that can be stored in the KDC memory depends on the size of the barcodes.

Example: *If only UPCA barcodes are scanned and the check digit is not transmitted, then each barcode takes up 11 (barcode data) + 2 (added bytes) + 2 (length and type) + 4 (time stamp) = 19 bytes. The maximum number of UPCA barcodes that can be saved is $204,800/19 = 10,778$. However, the maximum number of barcodes that can be stored is 10,240. Therefore, the KDC can store 10,240 UPCA barcodes.*

If different length barcodes are mixed, then you cannot compute the maximum number of barcodes that can be stored.

Data Buffer Full

When the data buffer is full, the KDC displays a message, **Buffer Full**, ignoring any command to scan barcodes. You must reset the data buffer to continue data collection.

APPENDIX B – FAQ

B.1 Symbology

Q: What barcode symbologies are supported by the KDC100?

A: KoamTac's KDC100 supports most major 1D barcode symbologies. Below is a list of the barcode symbologies supported by each model of KDC.

<i>KDC300</i>	<i>KDC100 / KDC 200 / KDC200P*</i>
<p><u><i>2D Barcodes</i></u></p> <p>AztecCode, AztecRunes, CodablockF, Code 16K, Code49, DataMatrix, MaxiCode, MicroPDF, PDF417, and QRCode</p> <p><u><i>1D Barcodes</i></u></p> <p>Codabar, Code11, Code32, Code39, Code128, EAN8, EAN13, EANUCC, I2of5, MSI, Plessey, PosiCode, RSS-14, RSSLimit, RSSEExpand, S2of5IA, S2of5ID, TLC39, Telepen, Trioptic, UPCA, and UPCE</p> <p><u><i>Postal Barcodes</i></u></p> <p>AusPost, CanadaPost, ChinaPost, JapanPost, KoreaPost, KixPost, Planet Code, Postnet (US), and UKPost</p> <p><u><i>OCR Fonts</i></u></p> <p>OCR-A, OCR-B, OCRUSCurrency, OCRMICRE13B, and OCRSEMIFONT</p>	<p><u><i>1D Barcodes</i></u></p> <p>EAN13 EAN8 UPCA UPCE Bookland EAN EAN13 with Add-on EAN8 with Add-on UPCA with Add-on UPCE with Add-on Interleave 2 of 5 ITF14 Code128 Codabar EAN128 Code39 Code93 Code35</p> <p><u><i>2D Barcodes</i></u></p> <p>PFD417 - KDC200P only</p>

Table 14 - Symbologies Supported by KDC

B.2 Host Interface

Q: What interface ports are supported by the KDC100?

A: All KDC barcode readers have one ultra mini USB port. *The KDC100 has a second USB port, a standard Type A port that swings out.*

B.3 Battery

Q: How long will the KDC100 battery last before it needs to be replaced?

A: The battery on all KDC models can be charged at least 300 times before it needs to be replaced.

Q: How long does it take to charge the KDC100?

A: It takes 2 hours to fully charge the KDC100 from an empty battery status to a fully charged status.

Q: How many barcodes can a fully charged KDC100 scan?

A: The KDC100 can scan more than 10,000 barcodes when fully charged.

Q: How long will the KDC100 battery lasts in the sleep mode?

A: The KDC100 lasts more than two weeks in sleep mode.

Q: Can I replace the KDC100 battery?

A: Yes. The KDC100 has a separate compartment for the battery which can be opened easily with a screw driver. Contact your distributor for a replacement battery.

B.4 Memory

Q: Can I download stored barcodes or wedge barcodes to my application?

A: Yes. KTSync[®] is synchronization and wedging software included with the KDC100 which supports host applications running on *Microsoft*[®] Windows XP, Vista, and Mobile5.0+.

Q: Does the KDC100 support *Blackberry*[®], *Symbian*[®], *Apple*[®], and *Palm*[®] devices?

A: KTSync[®] supports devices running *Microsoft*[®] Windows XP, Vista, and Mobile5.0+. Applications for *Blackberry*, *Symbian*, *Apple*, *Palm*, and others can be developed using KoamTac's software development kit. Contact KoamTac if you are interested in our SDK.

B.5 Programming

Q: Can the KDC100 be programmed by KoamTac's Business Partner?

A: Currently, the KDC doesn't support a programming environment for its partners. However, an application generator utility is scheduled for release in 2009.

Q: Does KoamTac provide customization services for the KDC100?

A: Yes. Custom applications or projects can be developed by KoamTac engineers. This service is provided for an additional fee to KoamTac. For more information regarding this service, please contact KoamTac.

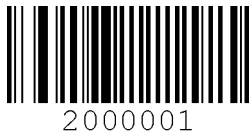
Q: Can a partner develop a PC or PDA application for the KDC100?

A: Yes. A software development kit for devices or applications running *Microsoft*[®] Windows XP, Vista, and Mobile5.0+ is available to our partners. Partners can use DLL and our demo source code included in the SDK for custom applications.

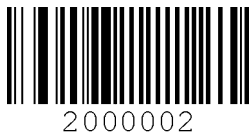
APPENDIX C - SPECIAL BARCODES

C.1 Set Symbolologies

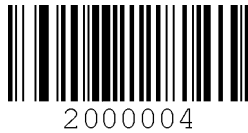
Enable EAN-13



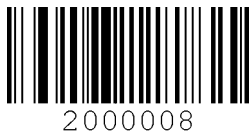
Enable EAN-8



Enable UPCA



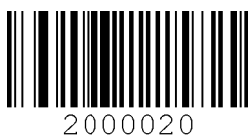
Enable UPCE



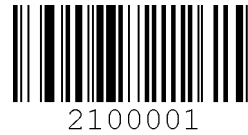
Enable Code39



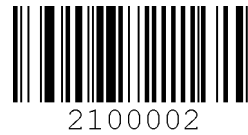
Enable ITF-14



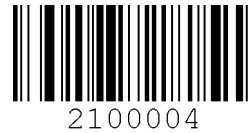
Disable EAN-13



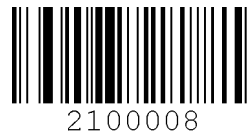
Disable EAN-8



Disable UPCA



Disable UPCE



Disable Code39



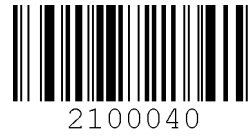
Disable ITF-14



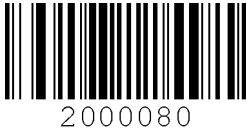
Enable Code128



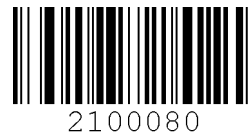
Disable Code128



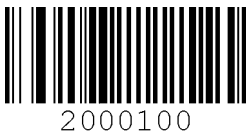
Enable Interleave 2 of 5



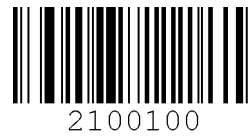
Disable Interleave 2 of 5



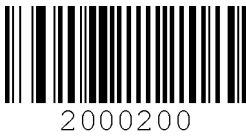
Enable Codabar



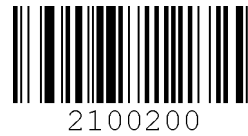
Disable Codabar



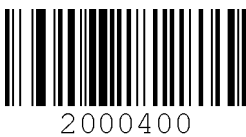
Enable EAN-128



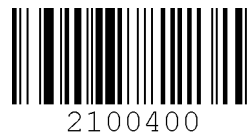
Disable EAN-128



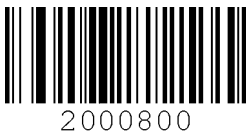
Enable Code93



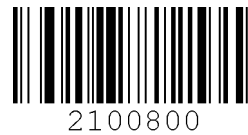
Disable Code93



Enable Code35



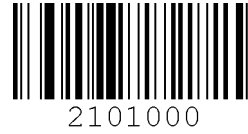
Disable Code35



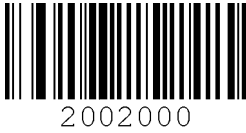
Enable Bookland EAN



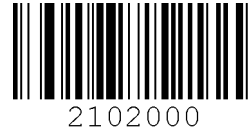
Disable Bookland EAN



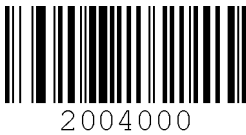
Enable EAN-13 Supplements



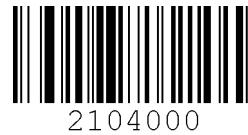
Disable EAN-13 Supplements



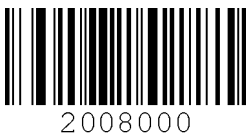
Enable EAN-8 Supplements



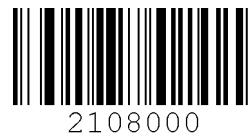
Disable EAN-8 Supplements



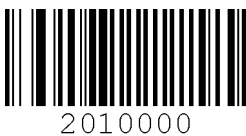
Enable UPCA Supplements



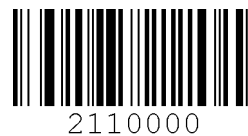
Disable UPCA Supplements



Enable UPCE Supplements

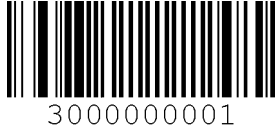


Disable UPCE Supplements

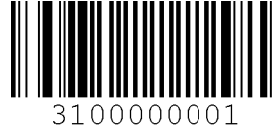


C.2 Barcode Options

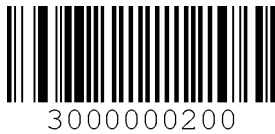
Codabar - do NOT transmit start/stop



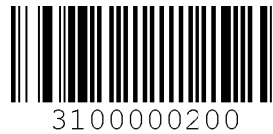
Codabar - transmit start/stop



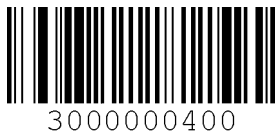
Convert UPCE to UPCA



Do NOT convert UPCE to UPCA



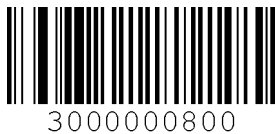
Convert EAN8 to EAN13



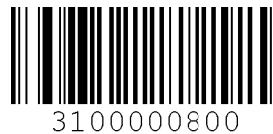
Do NOT convert EAN8 to EAN13



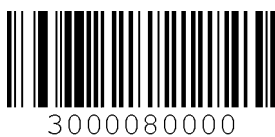
Convert UPCE to EAN13



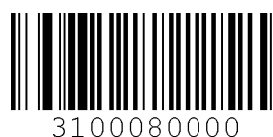
Do NOT convert UPCE to EAN13



Convert UPCA to EAN13



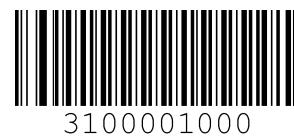
Do NOT convert UPCA to EAN13



ReturnCheckDigit



Do NOT ReturnCheckDigit



VerifyCheckDigit



3000002000

Do NOT VerifyCheckDigit



3100002000

Verify check digit for I2of5



3000400000

Do NOT verify check digit for I2of5



3100400000

Verify check digit for Code39



3000800000

Do NOT verify check digit for Code39



3100800000

Return check digit for I2of5



3004000000

Do NOT return check digit for I2of5



3104000000

Return check digit for Code39



3008000000

Do NOT return check digit for Code39



3108000000

Return check digit for UPCE



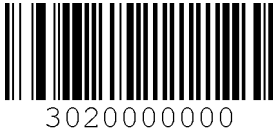
3010000000

Do NOT return check digit for UPCE

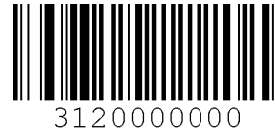


3110000000

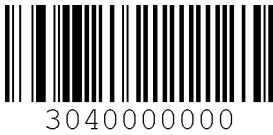
Return check digit for UPCA



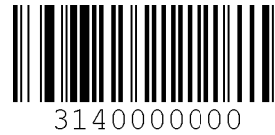
Do NOT return check digit for UPCA



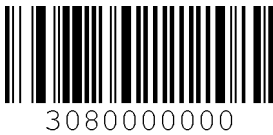
Return check digit for EAN8



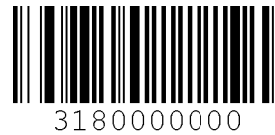
Do NOT return check digit for EAN8



Return check digit for EAN13



Do NOT return check digit for EAN13

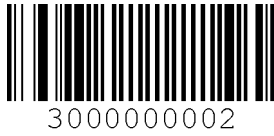


C.3 Delete Last Scanned Barcode

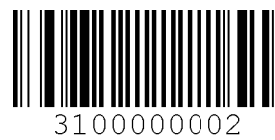


C.4 Scan Options

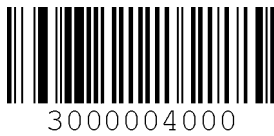
Reversed Scan



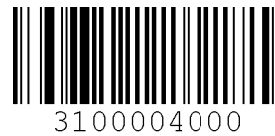
Normal Scan



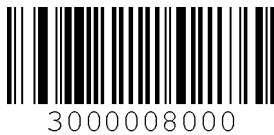
Wide scan angle



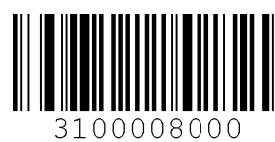
Narrow scan angle



High filter mode



Normal filter mode

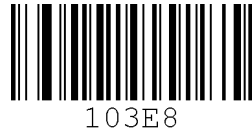


C.5 Scan Timeout

Timeout = 500msec
2sec



Timeout = 1sec



Timeout =



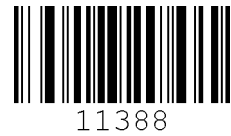
Timeout = 3sec
5sec



Timeout = 4sec



Timeout =



Timeout = 6sec
8sec



Timeout = 7sec



Timeout =



Timeout = 9sec



Timeout = 10sec



C.6 Minimum Barcode Length

Minimum Length = 2



002

Minimum Length = 3



003

Minimum Length = 4



004

Minimum Length = 5



005

Minimum Length = 6



006

Minimum Length = 7



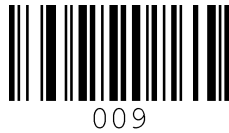
007

Minimum Length = 8



008

Minimum Length = 9



009

Minimum Length = 10



00A

Minimum Length = 11



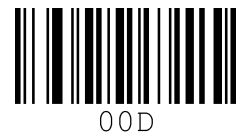
00B

Minimum Length = 12



00C

Minimum Length = 13



00D

Minimum Length = 14



Minimum Length = 15



Minimum Length = 16



Minimum Length = 17



Minimum Length = 18



Minimum Length = 19



Minimum Length = 20



Minimum Length = 21



Minimum Length = 22



Minimum Length = 23



Minimum Length = 24



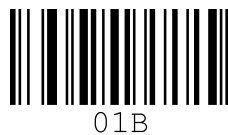
Minimum Length = 25



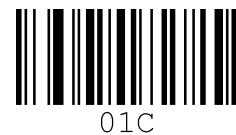
Minimum Length = 26



Minimum Length = 27



Minimum Length = 28



Minimum Length = 29



Minimum Length = 30



Minimum Length = 31



Minimum Length = 32



Minimum Length = 33



Minimum Length = 34



Minimum Length = 35



Minimum Length = 36



C.7 Security Level

Security level = 1



Security level = 2



Security level = 3



Security level = 4



C.8 Data Process - Wedge/Store

Wedge Only



Wedge & Store



Store Only



Wedge & Store if Sent



Wedge & Store if Not Sent



C.9 Data Process - Data Format - Handshake

Data format - Barcode only



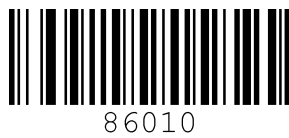
Data format - Packet data



Enable Handshake



Disable Handshake



C.10 Data Process - Termination Character

None



CR



LF



CR+LF



Tab

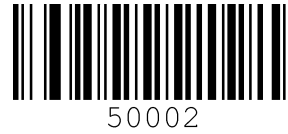


C.11 System

Memory Status



Reset Memory



Data/Time



Battery



Version



Button Lock



Button Unlock



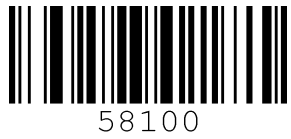
Enable Auto Menu Exit



Disable Auto Menu Exit



Enable Port Status



Disable Port Status



Time & Battery



Type & Time



Type & Battery



Factory Default



C.12 Sleep Timeout

Disable



1sec



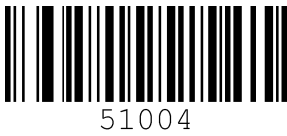
2sec



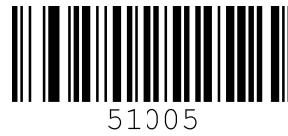
3sec



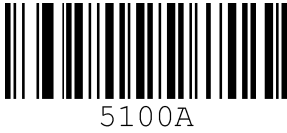
4sec



5sec



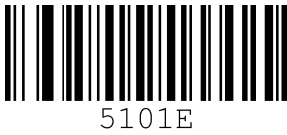
10sec



20sec



30sec



1min



2min



5min



10min

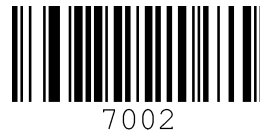


C.13 Function

F1



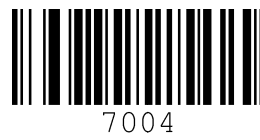
F2



F3



F4



F5



F6



F7



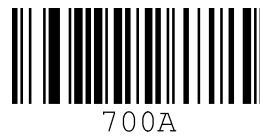
F8



F9



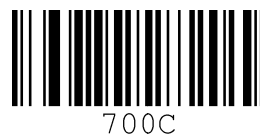
F10



F11



F12



C.14 Number

0



7130

1



7131

2



7132

3



7133

4



7134

5



7135

6



7136

7



7137

8



7138

9



7139

C.15 Lower Case Alphabet

a



b



c



d



e



f



g



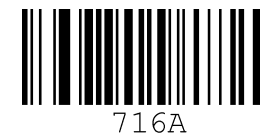
h



i



j



k



716B

l



716C

m



716D

n



716E

o



716F

p



7170

q



7171

r



7172

s



7173

t



7174

u



v



w



x



y



z



C.16 Upper Case Alphabet

A



B



C



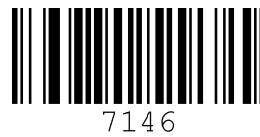
D



E



F



G



H



I



J



K



714B

L



714C

M



714D

N



714E

O



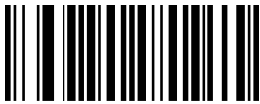
714F

P



7150

Q



7151

R



7152

S



7153

T



7154

U



V



W



X



Y



Z



C.17 Control Character

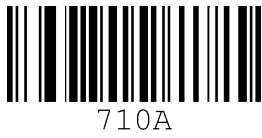
BS



TAB



LF



VT



CR



ESC



Space



DEL



C.18 Symbol Character

!



7121

“



7122

#



7123

\$



7124

%



7125

&



7126

‘



7127

(



7128

)



7129

*



712A

+



712B

,



712C

-



712D

.



712E

/



712F

:



713A

;



713B

<



713C

=



713D

>



713E

?



713F

@



7140

[



715B

\



715C

]



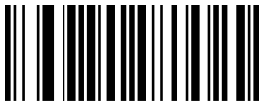
715D

^



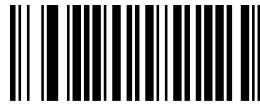
715E

—



715F

`



7160

|



717B



717C

}

~



717D



717E

Start-String



7201

Stop-String



7210

Note:

- You can compose a string up to 16 characters.
- A string would be composed by scanning the “Start-String”, number/alphabet/special characters, and “Stop-String” special barcodes.
- The KDC will abort string composition if you do not scan “Stop-String” in one minute after scanning “Start-String” and number/alphabet/special characters.

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